NORTHAMPTON TRAFFIC CALMING PROGRAM

Transportation and Parking Commission
City of Northampton, Massachusetts

City Hall, 210 Main Street, Room 18
Northampton, MA 01060-3199

INTRODUCTION

Speeding traffic is a major concern in the City of Northampton because of its detrimental impacts on the safety and livability of our streets.

Neighborhoods where speeding occurs experience unsafe conditions for pedestrians, bicyclists, and other drivers, as well as the negative environmental impacts of noise and air pollution. Many communities around the state and nation have turned to engineering solutions for speeding commonly known as "traffic calming".

The Institute of Traffic Engineers (ITE) defines traffic calming as, "the combination of mostly physical measures that reduce the negative effects of motor vehicle use, alter driver behavior and improve conditions for non-motorized users".

In plain English, traffic calming is building or retrofitting roadways with certain features and characteristics that induce drivers to slow down and pay more attention to their surroundings.

The Transportation and Parking Commission has developed this comprehensive program to guide the implementation of traffic calming in the City of Northampton.

HOW WILL TRAFFIC CALMING BENEFIT NORTHAMPTON?

Reduced vehicle speeds and increased driver attentiveness obtained through the appropriate use of traffic calming offer Northampton the following benefits:

- ✓ Reduction in the probability and severity of crashes.
- ✓ Increased safety for other drivers, including those entering/exiting the roadway at intersections or driveways.
- ✓ Increased safety for pedestrians, bicyclists, and transit users promoting greater use of these sustainable modes of transportation.
- ✓ Reduction of dangerous driving behaviors.
- ✓ More attractive streets and neighborhoods through the addition of sidewalks, trees, street furniture and other aesthetic features of traffic calming.
- ✓ Reclaiming streets so that walking and biking are safe and attractive options throughout the City.

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HOW IS TRAFFIC CALMING ACHIEVED?

The Massachusetts Highway Department divides traffic calming into three major categories of design measures.

1) Narrowing the real or apparent width of the street.
    - Pavement cross-section features including on-street parking, spot narrowing, bike lanes, travel lane width reduction, medians, islands, and road diets.
    - Placement along the street of buildings, trees, signage, and street furniture (e.g. lights, benches, bike racks, bus shelters, etc.).
    - Pavement edge treatments like raised curbs, neckdowns, chokers, and bulbouts.
2) Deflecting (introducing curvature to) the vehicle path.
    - Mid-block deflection measures including chicanes, lane offsets, short medians, crossing islands and mini-traffic circles.
    - Intersection measures including roundabouts, traffic circles, curb bulbouts, lane offsets, crossing islands, and neckdowns.
3) Altering the vertical profile of the vehicle path
    - Speed humps and speed tables.
    - Raised crosswalks and intersections
    - Textured pavement (e.g. pavers, stamped concrete, etc.)

WHAT TRAFFIC CALMING IS NOT

Citizen complaints about speeding traffic are often accompanied by requests for new Stop signs, traffic signals, turn restrictions, speed limit signs and the like. These are not traffic calming devices, but rather regulatory traffic controls that are governed by either national engineering guidelines, state laws, or both.

The Northampton Department of Public Works (DPW) frequently receives requests for new Stop signs to “slow down traffic” and “improve safety” on a local street. Not only are Stop signs not a traffic calming measure, but research shows that installing unnecessary Stop signs can often result in more collisions and more speeding.

Another common traffic-related request involves the lowering of posted speed limits on Northampton roadways. This is another regulatory control governed jointly by the Massachusetts Highway Department and the Registry of Motor Vehicles through a state approval process that requires documented speed and engineering studies. Again, most research concludes that driver speed is less a function of posted speed limits and more a function of real or perceived driving conditions.

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Unlike the aforementioned regulatory traffic controls that require some form of legal enforcement, traffic calming measures are designed to be self-enforcing. Drivers are slowed down by the physical characteristics of the roadway, not by an artificially imposed speed limit or Stop sign.

Traffic calming is also not specifically aimed at reducing the volume of traffic, though it may have that effect when installed on local streets subject to speeding cut-through traffic.

OBJECTIVES OF THE NORTHAMPTON TRAFFIC CALMING PROGRAM

- Improve the safety and livability of Northampton's streets and neighborhoods by using appropriately designed and implemented traffic calming measures to mitigate the impacts of traffic while creating safer streets for residents, motorists, pedestrians, and bicyclists;

- Maintain a traffic calming project selection process guided by objective, needs-driven criteria to ensure that limited City of Northampton resources are utilized in a cost-effective and efficient manner;

- Implement traffic calming measures that are appropriate and effective for a given situation or roadway and improve public safety without jeopardizing emergency response needs, creating hazards or nuisances, or impeding public transit or commercial truck routes;

- Ensure that any proposed traffic calming installation has public support in the affected neighborhood(s) before it is implemented.

- Welcome citizen input and involvement in all phases of the program.

PROCESS FOR INITIATING AND IMPLEMENTING TRAFFIC CALMING PROJECTS

To achieve the aforementioned objectives, the following process will be followed when considering requests for developing, designing, and implementing traffic calming measures on Northampton roadways.

This process provides for the submission of traffic calming requests and their evaluation by the City; the investigation of potential traffic calming solutions and potential development of traffic calming designs by City engineers or consultants; and the continual input and review by the affected neighborhood, the appropriate Boards and Commissions, and elected officials.

The process does <u>not</u> apply to:

a) Traffic calming measures that may be required on City streets to comply with State and Federal standards or warrants;

b) Temporary changes in traffic patterns needed to stage special events;

c) Experimental traffic calming measures installed temporarily for research and evaluation by the City and/or a partner agency or consultant;

d) Installation of traffic control devices (e.g. signals, Stop signs, roundabouts, etc.);

e) The installation of traffic calming devices that may be required on a Northampton roadway as mitigation for a commercial, residential, mixed-use, or other development project.

SUBMISSION OF TRAFFIC CALMING REQUESTS

A Northampton Traffic Calming Request form must be completed and submitted to the Transportation and Parking Commission, 210 Main Street, Room 18, Northampton, MA 01060. A minimum of one resident signature on the form is required, but additional space is provided for the signatures of multiple residents of a given area or neighborhood.

PRELIMINARY EVALUATION OF TRAFFIC CALMING REQUESTS

Requests for traffic calming will be put on the agenda of a Northampton Transportation and Parking Commission meeting scheduled within sixty (60) days of their receipt. The Commission shall notify the petitioner(s) and property owners in the affected area of the date of said meeting to allow for greater public input.

Following public comment, the Transportation and Parking Commission will make a determination as to whether or not the request for traffic calming merits further consideration under this process.

In making said determination, the Commission will consider the availability of City funding and resources and give priority to addressing traffic and safety concerns in the following areas:

1) Streets that provide access to a public school, or represent major walk-to-school or bicycle-to-school routes;

2) Streets that are heavily traveled by pedestrian and bicycle users seeking access to a public park, senior center, public/government building, downtown or commercial area, or a private facility (e.g. college, hospital, etc.);

3) Streets that have been programmed by the Department of Public Works for reconstruction in the near future and thereby present opportunities to realize cost savings by undertaking traffic calming installation simultaneously.

No further action may be required under the Northampton Traffic Calming Program on issues that can be reasonably addressed by alternative solutions (e.g. low-cost engineering improvements, new signage or markings, expanded enforcement, etc.).

In these cases, the DPW, Police Department, or other city agency will pursue agreed upon solutions and provide periodic updates to the Commission on their progress.

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TRAFFIC CALMING NEEDS ASSESSMENT

If the Commission determines that a request for traffic calming merits further consideration under the Northampton Traffic Calming Program, it shall request that the Department of Public Works (DPW) prepare a "Traffic Calming Needs Assessment" report within ninety (90) days, unless prevented by weather or other mitigating circumstances, for presentation at the next regular meeting following its completion.

The Department of Public Works (DPW), working in coordination with other relevant City departments (e.g. Police, Fire, Parking, etc.), shall compile the following data in a standardized report form on the subject area of the traffic calming request:

Physical Description (width, grade and alignment, number of lanes and width, pavement condition, parking, sidewalks, crosswalks, school crossings, bike lanes, and any other relevant descriptors).

Street classification (e.g. local street, major collector, etc.).

Posted speed limits and other regulatory signage or traffic controls.

Status of roadway as a designated route for:

- Walking access to a public school
- Emergency vehicles
- Transit buses or commercial trucks

Proximity to community facilities, schools, parks, and commercial areas.

Traffic Volume (average weekday by direction).

Traffic Speeds (average and 85th percentile).

Crash and Traffic Enforcement Data (5 year).

Extent of cut-through traffic on street (if applicable).

Alternative routes that traffic may seek to avoid traffic calming measures.

Engineering recommendations:

- Is the problem area a viable candidate for traffic calming installation?
- Which traffic calming measure(s) may be appropriate?
- Could the measures be designed and implemented by the DPW or would outside engineering services be required.
- Approximate design and installation costs based on local experience or state and national averages.
- Does the problem merit experimental installation of temporary traffic calming measures before a final determination is made?

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REVIEW OF NEEDS ASSESSMENT AND FINAL RECOMMENDATION

The Department of Public Works will present the findings and engineering recommendations of its Traffic Calming Needs Assessment to the Transportation and Parking Commission.

Once again, the petitioner(s) and affected neighborhood property owners will be given advance notification of said presentation. The Commission may choose to hear additional public comment during this meeting.

Upon review and discussion of the Needs Assessment, the Transportation and Parking Commission must vote to "Recommend" or "Not Recommend" that the requested traffic calming project be placed on the City of Northampton's "Priority List of Traffic Calming Projects".

In the event that the Commission does not have sufficient information to make a final recommendation, or a traffic problem first merits a test of experimental traffic calming measures, a vote on the matter may be tabled for a period not to exceed ninety (90) days.

Traffic calming requests that receive a "Not Recommend" vote remain eligible for future consideration, but must wait one (1) year before they can be re-submitted.

PRIORITY LIST OF TRAFFIC CALMING PROJECTS

The City of Northampton will likely have more potential traffic calming projects than it has funding and staff to implement them in a given year.

A priority ranking of traffic calming projects will be created and maintained by the Transportation and Parking Commission based on a set of objective, needs-driven criteria (see Table 1). Similar ranking systems exist for maintaining the City's roadway and sidewalk systems.

Each fiscal year, the Department of Public Works (DPW) will submit a formal request to the City of Northampton's Capital Improvement Program (CIP) for funding of the design and/or construction of recommended projects in ranked order on the Priority List of Traffic Calming Projects

Traffic calming projects will compete for funding as part of the City's annual Capital Improvement Program (CIP) process. High priority traffic calming projects, if successful in that process, will then be placed on the approved CIP list as recommended to the Mayor and Finance Director by the Capital Improvements Committee.

Funding of traffic calming projects, like all other proposed expenditures of City funds, will be subject to final approval and appropriation by the Northampton City Council.

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Table 1: Criteria for Ranking of Traffic Calming Projects

TRAFFIC CALMING PROJECT PRIORITIZATION CRITERIA			
Criteria	**Points Allowed**	**Points Awarded**	**Comments**
Volume	Up to 5		1 Point for each 1000 vehicles per day.
Speeding	Up to 10		Using measured 85th percentile speed, ½ point for each mile per hour starting at 10mph over the speed limit.
Crashes	Up to 10		1 point for each crash per year based on the three-year average.
Sidewalks	Up to 10		5 points if sidewalk on one side of street. 10 points if no sidewalks.
Planned D.P.W. Roadwork	50		50 points if roadway has been programmed for DPW resurfacing, rehabilitation, or reconstruction in the next 5 years.
Pedestrian Activity	Up to 10		Points given for high pedestrian activity centers.
Neighborhood Support	Up to 5		One point for every 20% of households within the impacted area who sign the Northampton Traffic Calming application.
Pace Car Participation	Up to 5		One point for every 20% of households who participate in the Northampton Pace Car program. (see www.northamptonma.gov/pacecar)
Alternative Funding	Up to 50		1 point for every $2,500 up to $50,000 funded by source other than City of Northampton; full 50 points for 100% funding.
Waiting List	Up to 5		1 point for each year on the waiting list.
	TOTAL		

PROGRAM IMPLEMENTATION

The Transportation and Parking Commission will implement this program on a 12-month trial basis to allow for modifications based on the City's experience and feedback in managing traffic calming projects. The Commission will review the program at the end of 12 months, make any necessary changes to finalize it, and submit it for final adoption by both the Board of Public Works and the City Council.

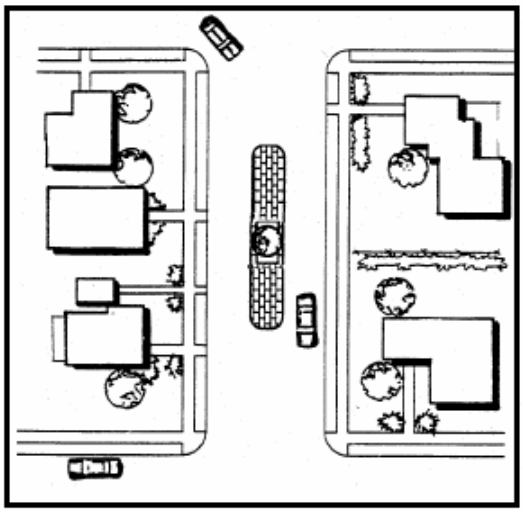
In the interim, the public is encouraged to offer feedback on the program to the Northampton Transportation and Parking Commission at 210 Main Street, Room 18, Northampton, MA 01060.

APPENDIX 1

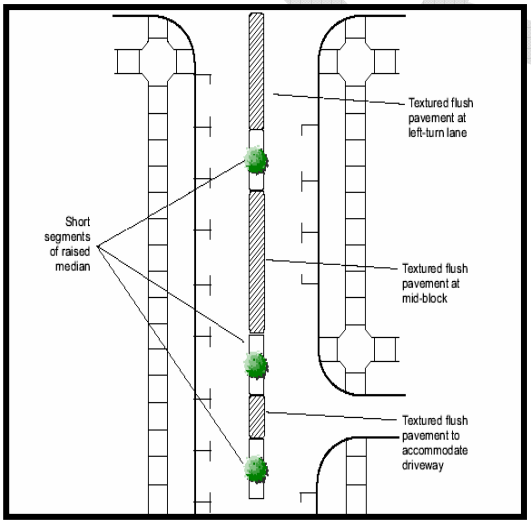
ALPHABETICAL LISTING OF TRAFFIC CALMING MEASURES FROM FEDERAL AND STATE DESIGN GUIDES

CENTER ISLAND NARROWING

A center island narrowing is a raised island located along the centerline of a street that narrow the travel lanes at that location. Center island narrowings are often landscaped to provide a visual amenity. Placed at the entrance to a neighborhood, and often combined with textured pavement, they are often called "gateway islands." Fitted with a gap to allow pedestrians to walks through at a crosswalk, they are often called "pedestrian refuges." Center Island Narrowings are good for entrances to residential areas, and wide streets where pedestrians need to cross.



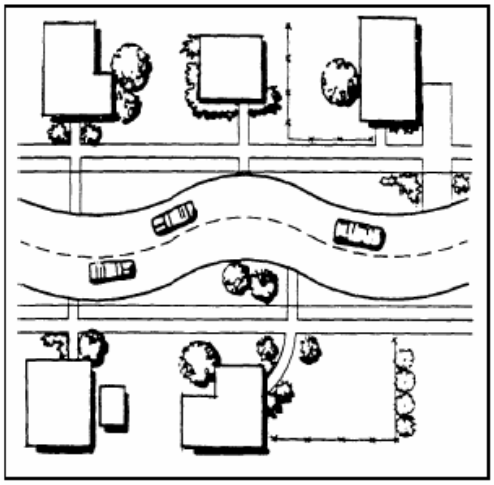
CENTER MEDIANS



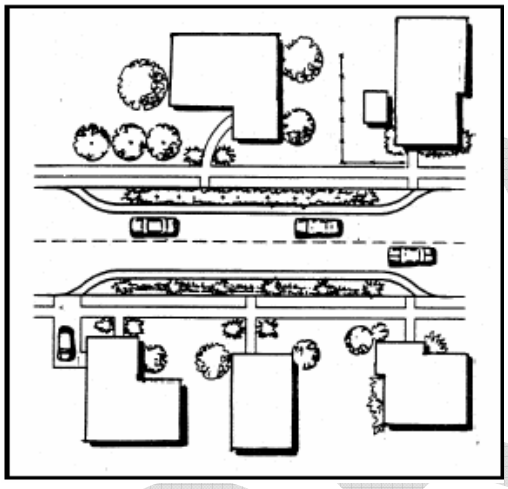
Traversable medians, typically built of textured or contrasting materials such as stamped concrete, bricks, pavers, or cobblestones can be effective traffic calming devices, particularly where periodic segments of raised median are included. These medians are flush with the travel lanes but are notably different, both in appearance and in feel to the driver. Traversable medians narrow the real and apparent width of the street, and provide deflection at end points, while still permitting unlimited driveway access across them.

CHICANE

Chicanes are curb extensions that alternate from one side of the street to the other, forming S-shaped curves. Chicanes can also be created by alternating on-street parking, either diagonal or parallel, between one side of the street and the other. Each parking bay can be created either by re-striping the roadway or by installing raised, landscaping islands at the ends of each parking bay. Good for locations where speeds are a problem but noise associated with Speed Humps and related measures would be unacceptable.



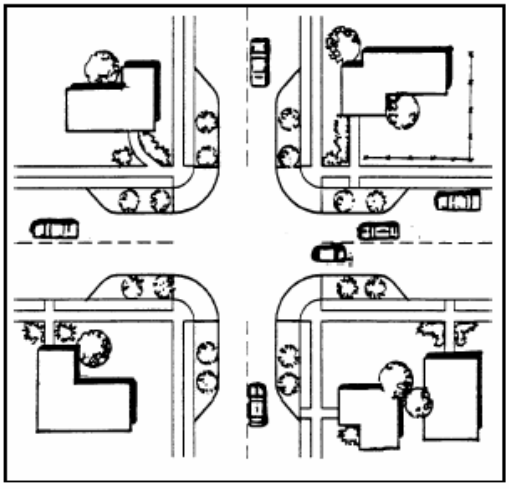
CHOKERS



Chokers are curb extensions at mid-block locations that narrow a street by widening the sidewalk or planting strip. If marked as crosswalks, they are also known as safe crosses. Two-lane chokers leave the street cross section with two lanes that are narrower than the normal cross section. One-lane chokers narrow the width to allow travel in only one direction at a time, operating similarly to one-lane bridges. They are good for areas with substantial speed problems and no on-street parking shortage.

NECKDOWNS/BULBOUTS

Neckdowns and bulbouts are curb extensions at intersections that reduce the roadway width from curb to curb. They "pedestrianize" intersections by shortening crossing distances for pedestrians and drawing attention to pedestrians via raised peninsulas. They also tighten the curb radii at the corners, reducing the speeds of turning vehicles. They are good for intersections with substantial pedestrian activity and areas where vertical calming measures would be unacceptable because of noise considerations.



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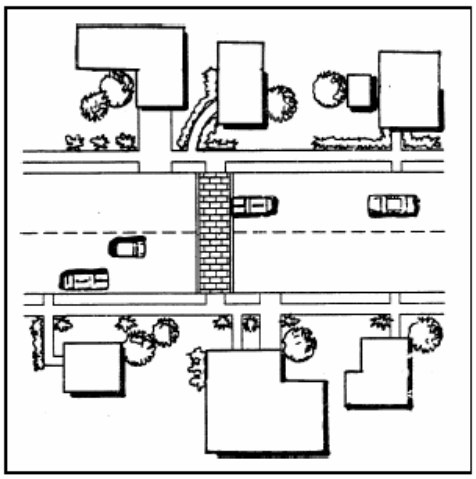
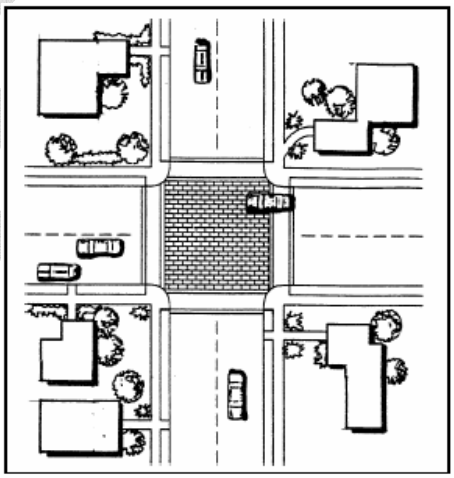
RAISED CROSSWALKS



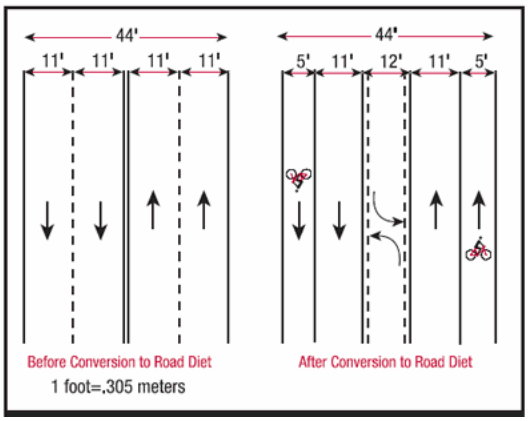
Raised crosswalks are Speed Tables outfitted with crosswalk markings and signage to channelize pedestrian crossings, providing pedestrians with a level street crossing. Also, by raising the level of the crossing, pedestrians are more visible to approaching motorists. Good for locations where pedestrian crossings occur at haphazard locations and vehicle speeds are excessive.

RAISED INTERSECTIONS

Raised intersections are flat raised areas covering an entire intersection, with ramps on all approaches and often with brick or other textured materials on the flat section. They are usually raised to the level of the sidewalk, or slightly below to provide a "lip" that is detectable by the visually impaired. By modifying the level of the intersection, the crosswalks are more readily perceived by motorists to be "pedestrian territory". Good for intersections with substantial pedestrian activity, and areas where other traffic calming measures would be unacceptable because of lost parking spaces.



ROAD DIETS



In some instances, the elimination of a travel lane on a four-lane roadway and conversion of another lane to a median with turning pockets can improve conditions for all users without adversely affecting roadway capacity. Reducing pavement widths could also provide for wider sidewalks in high pedestrian areas. These types of pavement re-allocation measures have been referred to as “road diets”.

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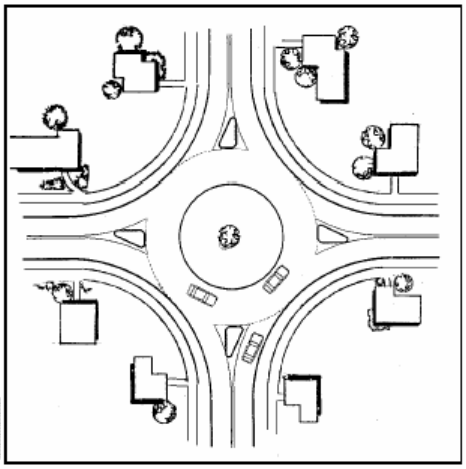
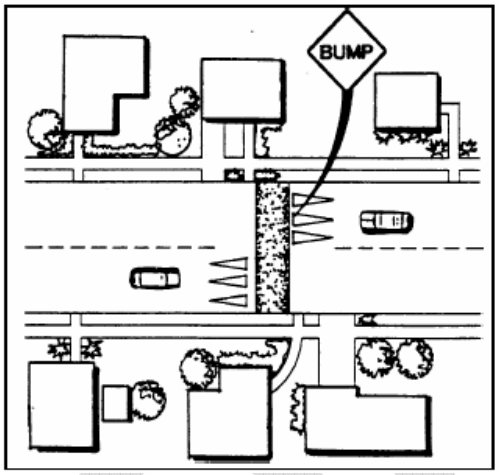
ROUNDABOUTS

Roundabouts require traffic to circulate counterclockwise around a center island. Unlike Traffic Circles, roundabouts are used on higher volume streets to allocate right-of-way between competing movements. Often a less-expensive alternative to traffic signals that provide increased levels of service and enhanced safety. Northampton Transportation Policies currently require an analysis of roundabout feasibility for any intersection construction or redesign.



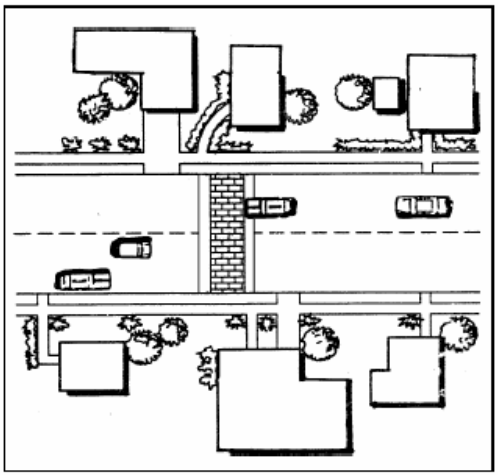
SPEED HUMPS



Speed humps are rounded raised areas placed across the roadway. They are generally 10 to 14 feet long (in the direction of travel), making them distinct from the shorter "speed bumps" found in many parking lots, and are 3 to 4 inches high. The profile of a speed hump can be circular, parabolic, or sinusoidal. They are often tapered as they reach the curb on each end to allow unimpeded drainage. Good for locations where very low speeds are desired and reasonable, and noise and fumes are not a major concern.

SPEED TABLES

Speed tables are flat-topped speed humps often constructed with brick or other textured materials on the flat section. Speed tables are typically long enough for the entire wheelbase of a passenger car to rest on the flat section. Their long flat fields give speed tables higher design speeds than Speed Humps. The brick or other textured materials improve the appearance of speed tables, draw attention to them, and may enhance safety and speed-reduction. Good for locations where low speeds are desired but a smoother ride is needed for larger vehicles.



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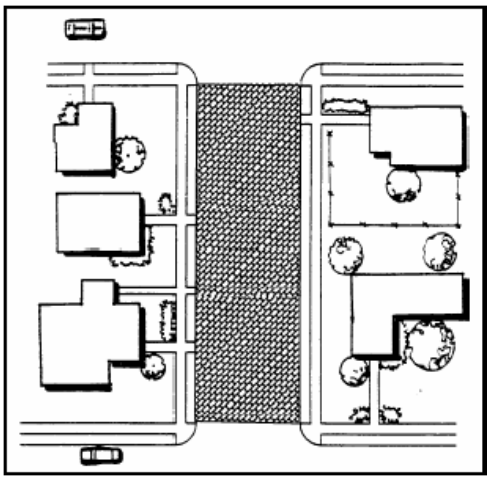
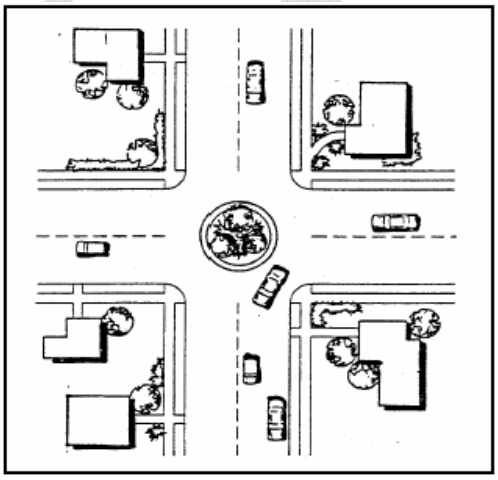
TEXTURED PAVEMENT



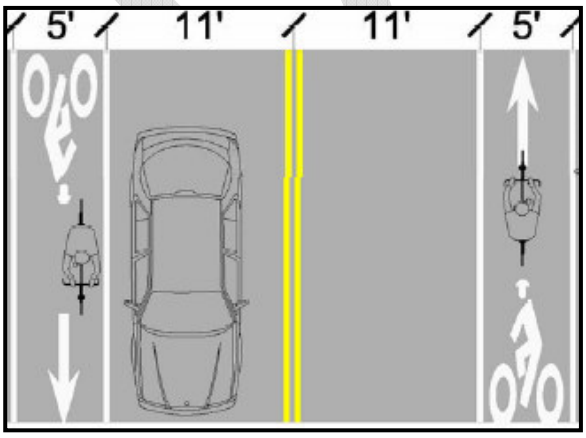
Textured pavement encourages motorists to be aware of an area of special concern due to the appearance of the texture, vibration, more noticeable motion of the vehicle, and tire noise. Pavement texture alone, at isolated locations, is not an effective traffic calming measure. Rather, textured pavement is more appropriate in support of other traffic calming measures such as mid-block narrowing, intersection curb extensions, or roundabouts.

TRAFFIC CIRCLES

Traffic circles are raised islands, placed in intersections, around which traffic circulates. They are good for calming intersections, especially within neighborhoods, where large vehicle traffic is not a major concern but speeds, volumes, and safety are problems. Placed at an intersection, they can calm two streets at once. When designed well, with plantings and other landscaping features, traffic circles can have positive aesthetic value in addition to enhanced intersection safety.



TRAVEL LANE WIDTH REDUCTION



Minimal travel lane widths can reduce vehicle speeds, reduce pedestrian crosswalk distances, and maximize the space available for bicycle lanes and sidewalks. Traffic calming can be achieved on residential and minor collector streets by reducing driving lane widths to 10 feet. A lane width of 11 feet is more appropriate for arterials or roadways that carry large numbers of trucks and buses.

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APPENDIX 2

SOURCES AND REFERENCES

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